CW/HW#84H: Quadratics Review

Honors Geometry

Due: Monday, February 29th

*Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PD:\_\_\_\_\_\_*

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| ***Graph the functions below. Do NOT copy the graph from your graphing calculator. Fill in a table of values and use those to plot points on your graph.*** | |
| |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | |  |  |      |  |  | | --- | --- | | Axis of symmetry: |  | | Vertex: |  | | Maximum/Minimum: |  | | Solution(s): |  | | |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  | | --- | --- | | Axis of symmetry: |  | | Vertex: |  | | Maximum/Minimum: |  | | Solution(s): |  | |
| |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | |  |  |  |  |  | | --- | --- | | Axis of symmetry: |  | | Vertex: |  | | Maximum/Minimum: |  | | Solution(s): |  | | |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | |  |  |      |  |  | | --- | --- | | Axis of symmetry: |  | | Vertex: |  | | Maximum/Minimum: |  | | Solution(s): |  | |
| ***Give an example of a quadratic function that matches each of the descriptions below.*** | |
| 1. Its graph opens downward. | 1. The vertex of its graph is at the origin. |
| 1. Its graph opens upward. | 1. Its graph is wider than the graph of . |
| 1. The vertex of its graph is at . | 1. Its graph is narrower than the graph of and its vertex is at . |
| ***Solve the quadratic equations below. If the equation has no real-number solution, write no solution.*** | |
|  |  |
|  | 1. Factor: |
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| --- | --- |
|  | 1. Factor: |
|  |  |
|  |  |
| 1. Factor: | 1. Factor: |
| 1. Without using a calculator, determine the number of real-number solutions of the equation: | 1. Without using a calculator, determine the number of real-number solutions of the equation: |
| 1. Without using a calculator, determine the number of real-number solutions of the equation: | 1. Without using a calculator, determine the number of real-number solutions of the equation: |
| 1. The area of a circle *A* is given by the formula , where *r* is the radius of the circle. Find the radius of a circle with an area of 16 inches2. Round your answer to the nearest tenth of an inch. | |
| 1. You are planning a rectangular patio with a length that is 7 feet less than three times its width. The area of the patio is 120 ft2. What are the dimensions of the patio? Draw a labeled picture before solving. | |
| 1. A ball is thrown into the air. The height *h*, in feet, of the ball can be modeled by the equation , where *t* is the time, in seconds, that the ball is in the air.    1. When will the ball hit the ground?    2. What is the highest altitude the ball will reach?    3. At what time does the ball reach its highest altitude? | |
| 1. Suppose a rectangle has an area of 60 feet2 and dimensions, in feet, of and .    1. Estimate each dimension of the rectangle to the nearest foot.    2. Write a quadratic equation and solve to find each dimension to the nearest hundredth of a foot. | |
| 1. Describe how the graph of the function would change if the function became . | |
| 1. Consider the right triangle whose legs are equal to the expression and the expression , and whose hypotenuse is equal to . What are the actual lengths of the legs of the triangle? Draw a labeled picture before solving. Your answer should be in simplified radical form. | |
| 1. A square and a rectangle have the same area. The length of the rectangle is five inches more than twice the length of the side of the square. The width of the rectangle is 6 inches less than the side of the square. Find the length of the side of the square. Draw labeled pictures. | |